

Work Order ID 85144

85144

Page 1

June-04-12 1:27:32 PM

Item ID: D350-636-013

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Skidtube LH

Stop *NS2*

Start Date: 04/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/06/04

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2750	F
D3492	C
IIN-D350-636	I

MLJ 12/07/11

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-013 CHG 006

20% 12/6/12
JB

385144LH

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8830 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill only two fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-3 details). Drill using drill Jig DT8150 & DT8861A for first side only DT8861B for second side (detail B)

7- Clecko DT8861B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8- Open up holes for SECTION AW-AW to 0.375" (2 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open holes for ground handling and detail T to 0.500" (8 holes per side)

9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

10-Open up holes of Detail A to 0.297" (total of 2 holes per side)

BER/06/25

JB 12/06/28

BE 12/06/25

JB 12/06/28

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QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left
from bending as per QSI 004

A/R Aluminum Rod batch: *M122130 BE 12/6/25*

12-Grind welds flush as per Dwg D2750

BE 12/6/26

120

QC10- Inspect visual per QSI004- ground welds

0.00

120

QC

Memo

0.00

Sc 12/6/25

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Sc 12/6/25

Quality Control

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____

Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	QC7-Inspect Chemical Conversion Coat	0.00							
150									
QC	Memo	0.00							
Quality Control									

1 7/16 12627

DP 12-7-3

W/O:		WORK ORDER CHANGES					
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Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Skidtubes

Skidtubes

Memo

0.00

1-Open up holes section AW-AW 0.500" (4 per side) as per dwg D2750

3-Open up holes of Detail T and ground handling to 0.625" (total of 8 holes per side Detail AV-AV) as per dwg D2750.

4-Chamfer holes of section AW-AW, AV-AV, T and ground handling. (welding instructions on sheet 10)

5-Deburr and blow out all chips from inside of tube. Prepare tube for welding, remove alodine as required.

6-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291

batch: 121409exp. date: 13-4-12

7- Weld spacers D3490-1, D3490-5 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 10)


A/R Aluminum Rod

batch: M122130

8-Grind welds flush as per Dwg D2750

9-Spot face ground handling holes (total of 4 places per side) as per dwg D2750

10-Deburr holes

 CF 12-7-3

- DC 12/07/03

BE 12/07/06

BE 12/07/06

BE 12/07/06

BE 12/07/06

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N9000040100

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1

Cust Item ID:

Required Date: 18/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

170

QC10- Inspect visual per QSI004- ground welds

0.00

170

QC

Memo

0.00

Quality Control

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

190

Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 MG 12-79

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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

200

Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

210

QC3- Inspect Part Finish

0.00

210

QC

Quality Control

Memo

Inspect for foreign object per QSI 024

0.00

220

HandFinishing

0.00

220

HandFinish

Hand Finishing

Memo

1-Install inserts as per dwg D2750

0.00

1X

MF 12/07/09

1 unit d M 12/07/10

1 unit d M 12/07/10

M121841

11:20
3200F
11:50

W/O:		WORK ORDER CHANGES					
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Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

230

230

HandFinish

Hand Finishing

HandFinishing

0.00

0.00

Memo

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: U40

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: AA121130

EXP DATE: 14/03

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: AA110340

5-Coat all exposed fasteners with "LPS Procyon" batch: AA114596

1 W/L 1 26 u/02/10

240

240

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8 17/07/11

W/O:		WORK ORDER CHANGES					
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Tooling:

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Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250

Pick Kit

0.00

250

Packaging

Memo

0.00

Packaging

1x 12/12/11

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.00

Quality Control

25 12/12/12

270

Packaging

0.00

270

Packaging

Memo

0.00

Packaging

Package as per PPP D350-636-013

12/12/12

W/O:		WORK ORDER CHANGES					
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

MCS 12107113
MCS 12107113

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Picklist Print

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Parent Item: D350-636-013

D350-636-013

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:H02.09.25Rearranged procedure steps KJ
 IPP rev 1 06.03.30 Per rev. D dwg EC
 IPP Rev:J 07-07-28 Added SS Wearplates(Rev E) JLM Verified By:EC
 IPP Rev:K 08-09-23 revF as per dwg DD verified by:ec IPP Rev:L
 10.06.22 revise seq110 DD verf:EC IPP Rev:M 10.10.01 as
 per IIN revH DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-3-BENT		Manufactured	No			110	Each	29.0000	1	1			

D2600-3-BENT

Extrusion Bent

**

BE12/06/25

Location	Loc Qty	Loc Code
LG	29	
66875	7	
73253	1	
75021	1	
75022	1	
75023	1	
81330	4	
83305	1	
83442	13	

D3493-1

Manufactured No

110

Each

127.0000

2

2

✓

D3493-1

Washer

**

JB 12/07/11

Location	Loc Qty	Loc Code
ST050	127	
77573	1	
82023	26	
83097	100	

93097

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D350-636-013

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2739

Manufactured No

160

Each

13.0000

1

1

D2739

350 I Beam

**

DC 12/07/03

Location

B85486

Loc Qty

Loc Code

LG

13

72155

1

81508

1

83447

4

83448

5

83548

2

D2744

Manufactured No

160

Each

35.0000

1

1

D2744

Cap

**

BE 12/06/25

Location

Loc Qty

Loc Code

LG002

35

62715

1

78900

3

83412

31

D3490-1

Manufactured No

160

Each

45.0000

4

4

D3490-1

Cross Bolt Spacer

**

BE 12/07/05
B85419 x4

Location

Loc Qty

Loc Code

LG

2

81976

2

LG001

43

62450

2

74875

4

77042

3

83269

34

Dart Aerospace Ltd

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85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3490-5

Manufactured No

160

Each

57.0000

4

4

D3490-5

Cross Bolt Spacer

**

BE 12/07/05

Location

Loc Qty

Loc Code

LG

13

78958

13

LG001

44

83373

44

4

D2743

Manufactured No

220

Each

296.0000

8

8

D2743

Crossbolt Spacer

**

BE 12/07/05

Location

Loc Qty

Loc Code

LG

222

81965

55

83262

167

8

LG001

74

67766

4

68251

3

73403

64

74445

1

79517

2

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Shop Packet Print

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Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

451.0000

4

4

AN3C6A

BOLT

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP001

1

111982

1

ST351

450

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

13

119449

21

120423

3

120693

158

121682

200

xc

AN6C44A

Purchased

No

230

Each

86.0000

4

4

AN6C44A

BOLT

**

HL 12/07/10

Location

Loc Qty

Loc Code

FG

2

103964

2

ST343

84

121013

11

121167

13

121440

50

121689

10

M121440

xc

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 6

• Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN8C35A

Purchased

No

230

Each

68.0000

1

1

AN8C35A

BOLT

**

12/07/10

Location

Loc Qty

Loc Code

FP002

67

115960

1

118286

16

121275

50

X1

ST346

1

114442

0

115188

0

115960

1

AN960C10L

NAS1149C0332

Purchased

No

230

Each

0.0000

38

38

*AN960C10I * ¥

washer

D2745

Manufactured

No

230

Each

122.0000

8

8

D2745

Bushing

**

11122063

(V38) 12/03/10

**

12/07/10

Location

Loc Qty

Loc Code

FP

6

79518

6

1385416

y 2

FP001

116

69529

1

76142

1

83260

114

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Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 7

Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3488-041

Manufactured No

230

Each

9.0000

1

1

D3488-041

Blade Fitting Assembly, LH

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP002

9

61689

1

385807

VI

82271

8

D3492-1

Manufactured No

230

Each

257.0000

8

8

D3492-1

Plug

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP002

242

69531

8

74444

2

76235

4

83259

228

XL

FP-A

15

83098

15

D3492-5

Manufactured No

230

Each

161.0000

8

8

D3492-5

Plug

**

HL 12/07/10

Location

Loc Qty

Loc Code

fpa

161

83100

60

83530

101

XL

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 8

• Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-25	Manufactured	No	230	Each	34.0000	1	1	
D3535-25								
Wearshoe								

**

Handwritten: 12/07/10

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	34	
62233	1	
81357	1	
82156	2	
83387	17	
<u>83899</u>	13	

D3536-25	Manufactured	No	230	Each	28.0000	1	1	
D3536-25								
Gasket								

**

Handwritten: 12/07/10

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	28	13
<u>83391</u>	12	
83900	16	

D3537-1	Manufactured	No	230	Each	83.0000	3	3	
D3537-1								
Wearpad								

**

Handwritten: 12/07/10

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	10	
79833	10	
FP002	73	
69817	5	
81360	14	
81362	19	
83254	1	
83255	3	
84091	31	

Handwritten: B83256

Handwritten: VI

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3631-1

Manufactured No

230

Each

347.0000

8

8

D3631-1

Washer

**

HL 12/07/10

Location

Loc Qty

Loc Code

FG

332

81874

2

83588

330

ST072

15

68062

2

75548

13

VB

D3672-13

Purchased

No

230

Each

774.0000

2

2

D3672-13

Phenolic Washer

**

current JEN CHG 004 and up
N/A u 12/07/13

Location

Loc Qty

Loc Code

ST060

774

54363

774

D3791-1

Manufactured

No

230

Each

17.0000

1

1

D3791-1

Wearplate

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP002

17

62239

2

83392

15

VL

D3793-1

Manufactured

No

230

Each

28.0000

1

1

D3793-1

Wearshoe

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP001

28

82171

2

83393

13

83903

13

VL

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Page 9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 10

Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3793-3

Manufactured No

230

Each

28.0000

1

1

D3793-3

Wearshoe

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP001

28

1382166

83394

16

XL

83901

12

D3794-1

Manufactured No

230

Each

26.0000

1

1

D3794-1

Gasket

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP

6

82167

6

XL

FP002

20

83395

20

D3794-3

Manufactured No

230

Each

23.0000

1

1

D3794-3

Gasket

**

HL 12/07/10

Location

Loc Qty

Loc Code

FP

21

83396

21

XL

FP002

2

74530

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 11

Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

MS21043-6

Purchased

No

230

Each

618.0000

4

4

MS21043-6

NUT

**

ME 12/07/11

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

598

117887

2

118384

96

120308

500

X4

MS21083C8

Purchased

No

230

Each

81.0000

1

1

MS21083C8

NUT

**

ME 12/07/10

Location

Loc Qty

Loc Code

304

75

121185

29

121349

46

X1

FP002

1

115884

1

ST303

4

115884

0

118077

1

119309

2

119638

1

ST304

1

121524

1

NAS1149C0832R

Purchased

No

230

Each

257.0000

1

1

NAS1149C0832R

WASHER

**

ME 12/07/10

Location

Loc Qty

Loc Code

ST297

257

114915

257

X1

June-04-12 1:27:36 PM

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Page 11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 12

Work Order ID: 85144

85144

Parent Item: D350-636-013

D350-636-013

Parent Item Name: Skidtube LH

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1515H3L

Purchased

No

230

Each

146.0000

4

4

***NAS1515H3I ***

WASHER

**

M 12/07/10

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

106

118686

3

119438

1

120360

11

121243

2

121556

89

✓✓

NAS1611-005

Purchased

No

230

Each

180.0000

8

8

NAS1611-005

O-RING

**

M 12/07/10

Location

Loc Qty

Loc Code

FP001

180

106099

18

114220

78

119438

44

121415

40

✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 13

Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

188.0000

8

8

NAS1611-010

O-RING

**

u nlozic

Location

Loc Qty

Loc Code

FP001

188

110915

14

117460

8

118077

1

118612

3

119438

47

121259

2

121415

4

121584

59

121723

50

x8

AN8C21A

Purchased

No

250

Each

57.0000

2

2

AN8C21A

BOLT

**

20 500

Location

Loc Qty

Loc Code

ST343

57

118758

3

121167

4

121275

50

121275

D2741

Manufactured

No

250

Each

20.0000

1

1

D2741

Blade, 350 Skidtube

**

83135 20 12/07/11

Location

Loc Qty

Loc Code

ST

-10

ST466

30

71856

1

79516

19

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Page 13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 14

Work Order ID: 85144

Parent Item: D350-636-013

Parent Item Name: Skidtube LH

85144

D350-636-013

Start Date: 04/06/2012

Required Date: 18/06/2012

Start Qty: 1.00

Required Qty: 1.00

MS21083C8

Purchased

No

250

Each

81.0000

2

2

**

JB

SP

MS21083C8

NUT

Location

Loc Qty

Loc Code

304

75

121185

29

121349

46

121349

FP002

1

115884

1

ST303

4

115884

0

118077

1

119309

2

119638

1

ST304

1

121524

1

NAS1149D0863J

Purchased

No

250

Each

251.0000

2

2

**

JB

SP

12/07/11

NAS1149D0863.J

WASHER

Location

Loc Qty

Loc Code

ST298

251

118078

34

119307

17

120308

100

121556

100

120308

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Page 14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
 - ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
 - POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
 - BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
 - MINIMUM YIELD TENSILE STRENGTH = 35 KSI
 - MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
- POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
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ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 85144 MLJ
12/06/04

RELEASED
68 07 27 14

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741; QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEC 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN	PORT HADLOCK, WA		
DRAWN			
CHECKED	DART AEROSPACE USA, INC.		
MFG. APPR.	D2750	REV. F	
APPROVED	TITLE	SHEET 1 OF 11	
DE APPR.	350 SKIDTUBE ASSEMBLY	SCALE	
DATE	08.07.16	NTS	

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

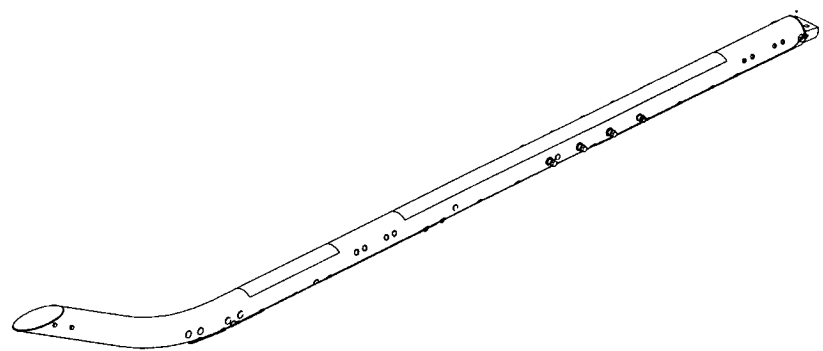
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

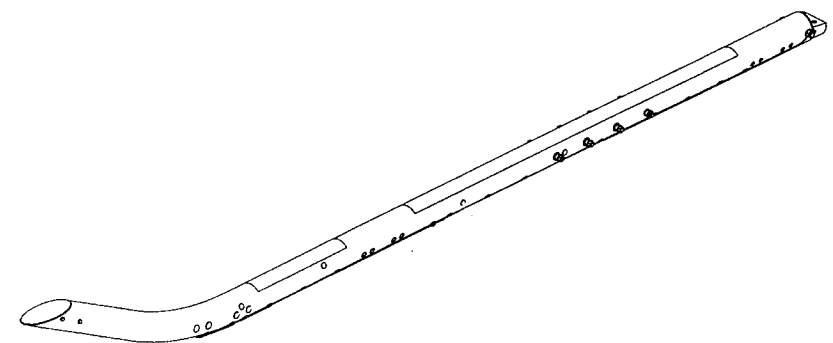
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

85744



D2750-041 350 SKIDTUBE ASSEMBLY, LH



D2750-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
08.07.16

DESIGN	PC	DART AEROSPACE USA, INC.	
DRAWN	AD	PORT HADLOCK, WA	
CHECKED	AS	DRAWING NO.	REV. F
MFG. APPR.	MS	D2750	SHEET 2 OF 11
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

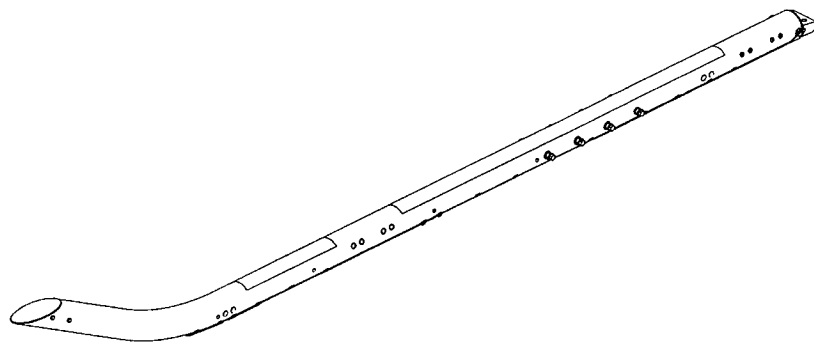
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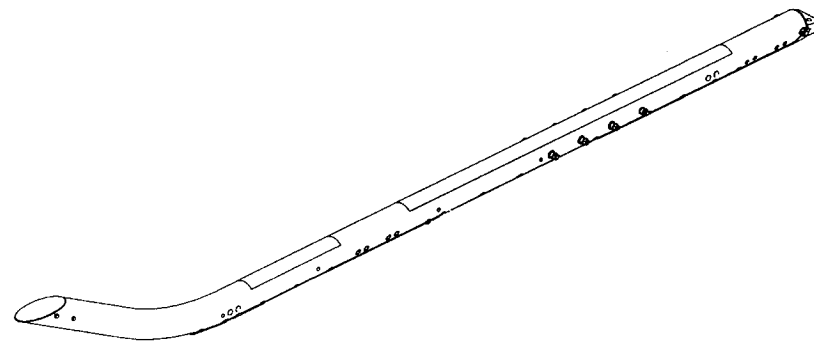
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

85144



D2750-043 350 SKIDTUBE ASSEMBLY, LH



D2750-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED
68-09-22/14

DESIGN	100	DART AEROSPACE USA, INC.	
DRAWN	100	PORT HADLOCK, WA	
CHECKED	100	DRAWING NO.	REV. F
MFG. APPR.	100	D2750	SHEET 3 OF 11
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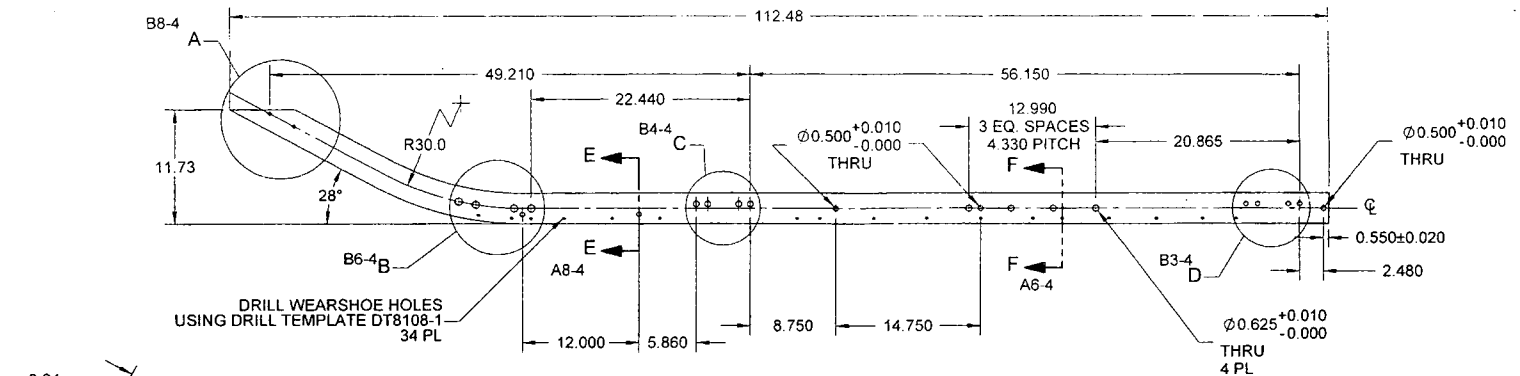
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

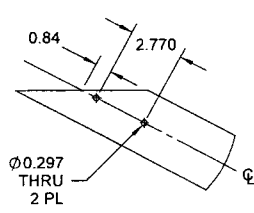
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

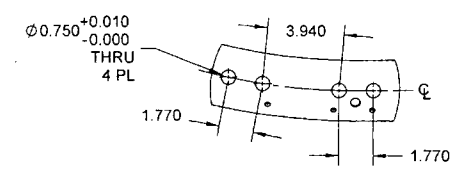
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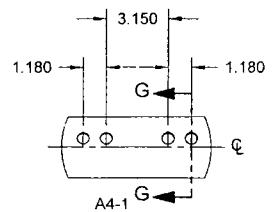
D2750-1 LH SKIDTUBE



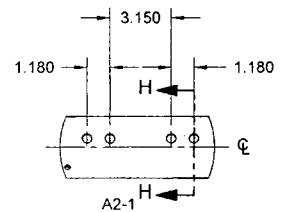
DETAIL A
SCALE 2X



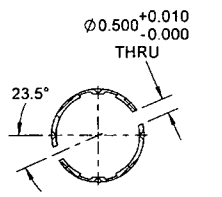
DETAIL B
SCALE 2X



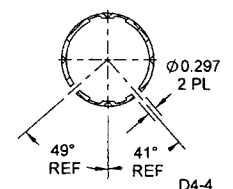
DETAIL C
SCALE 2X



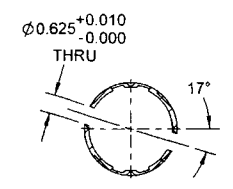
DETAIL D
SCALE 2X



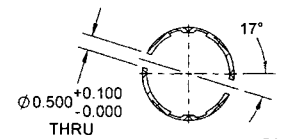
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

RELEASED

DESIGN	PH	DART AEROSPACE USA, INC.	
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CHECKED		DRAWING NO. D2750	REV. F
MFG. APPR.		SHEET 4 OF 11	
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DATE	08.07.16	NTS	
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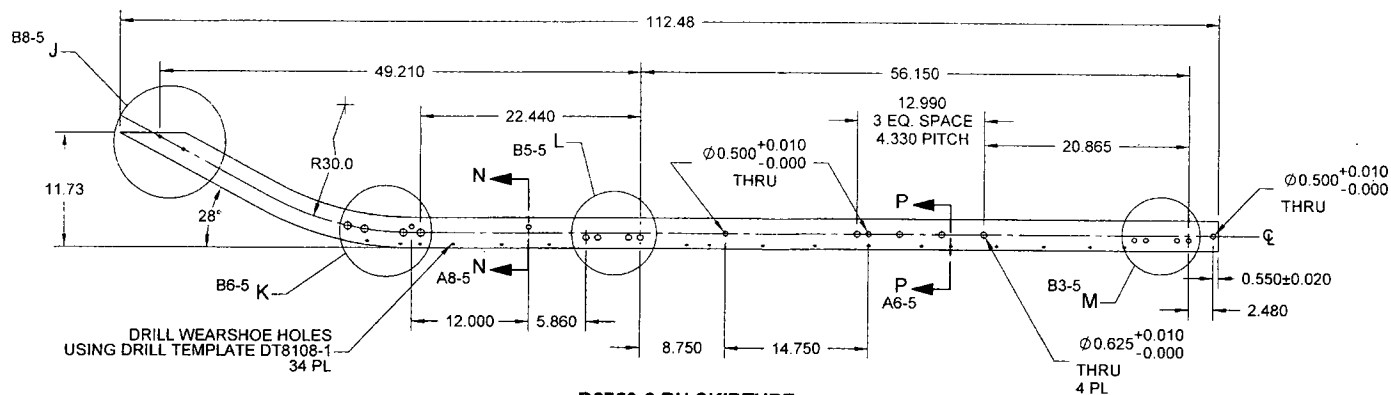
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

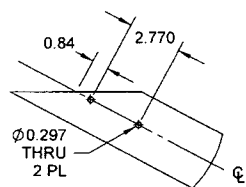
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

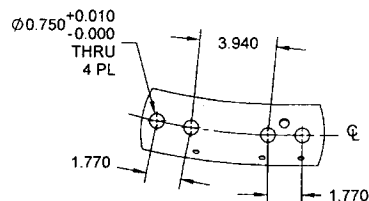
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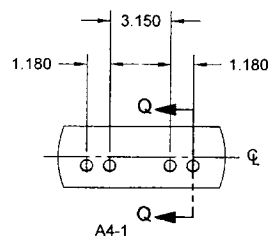
D2750-2 RH SKIDTUBE



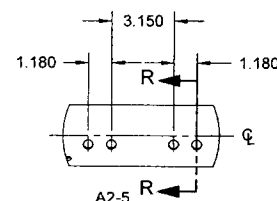
DETAIL J
SCALE 2X



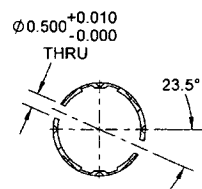
DETAIL K
SCALE 2X



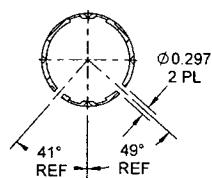
DETAIL L
SCALE 2X



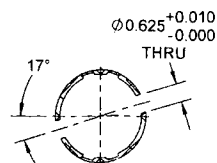
DETAIL M
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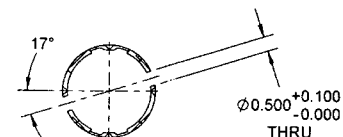
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

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DESIGN		DART AEROSPACE USA, INC.	
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Dart Aerospace Ltd

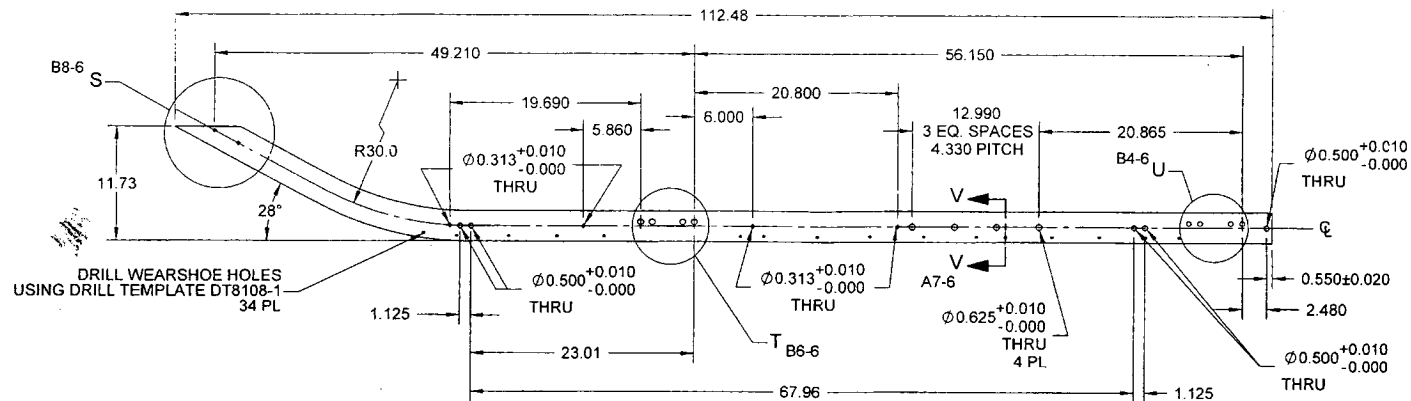
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

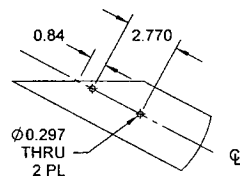
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

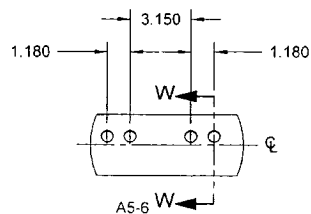
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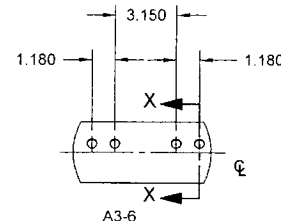
D2750-3 LH SKIDTUBE



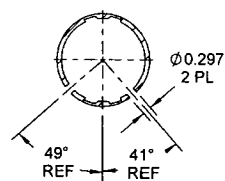
DETAIL S
SCALE 2X



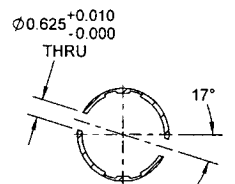
DETAIL T
SCALE 2X



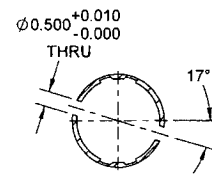
DETAIL U
SCALE 2X



SECTION V-V
SCALE 3X, 17 PL



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

RELEASED
06 JAN 22 1988

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
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MFG. APPR.		D2750	SHEET 6 OF 11
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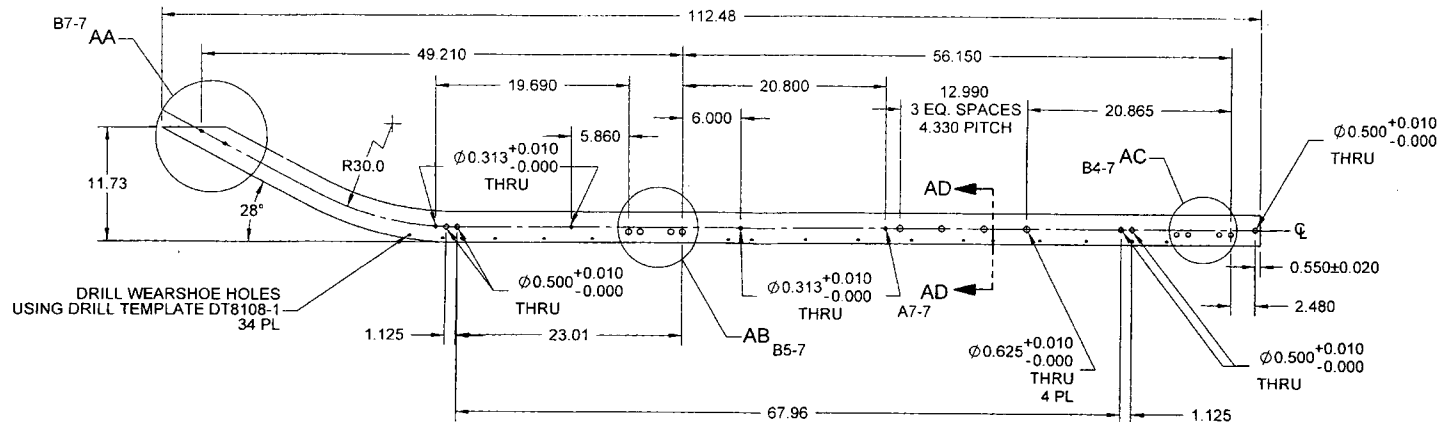
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

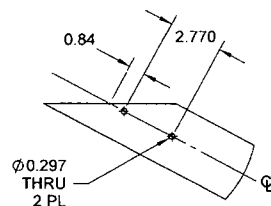
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

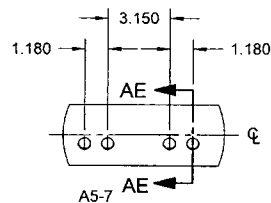
NOTE: Date & initial all entries



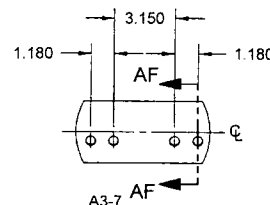
D2750-4 RH SKIDTUBE



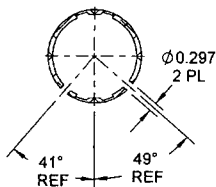
DETAIL AA
D7-7
SCALE 2X



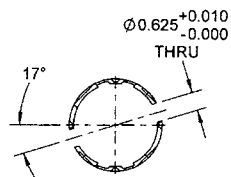
DETAIL AB
C4-7
SCALE 2X



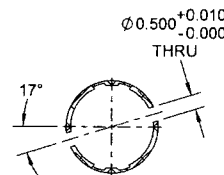
DETAIL AC
D3-7
SCALE 2X



SECTION AD-AD
D3-7
SCALE 3X, 17 PL



SECTION AE-AE
B6-7
SCALE 3X, 4 PL



SECTION AF-AF
B4-7
SCALE 3X, 4 PL

RELEASED
06-09-2016

DESIGN		DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
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MFG. APPR.		TITLE 350 SKIDTUBE ASSEMBLY	SHEET 7 OF 11
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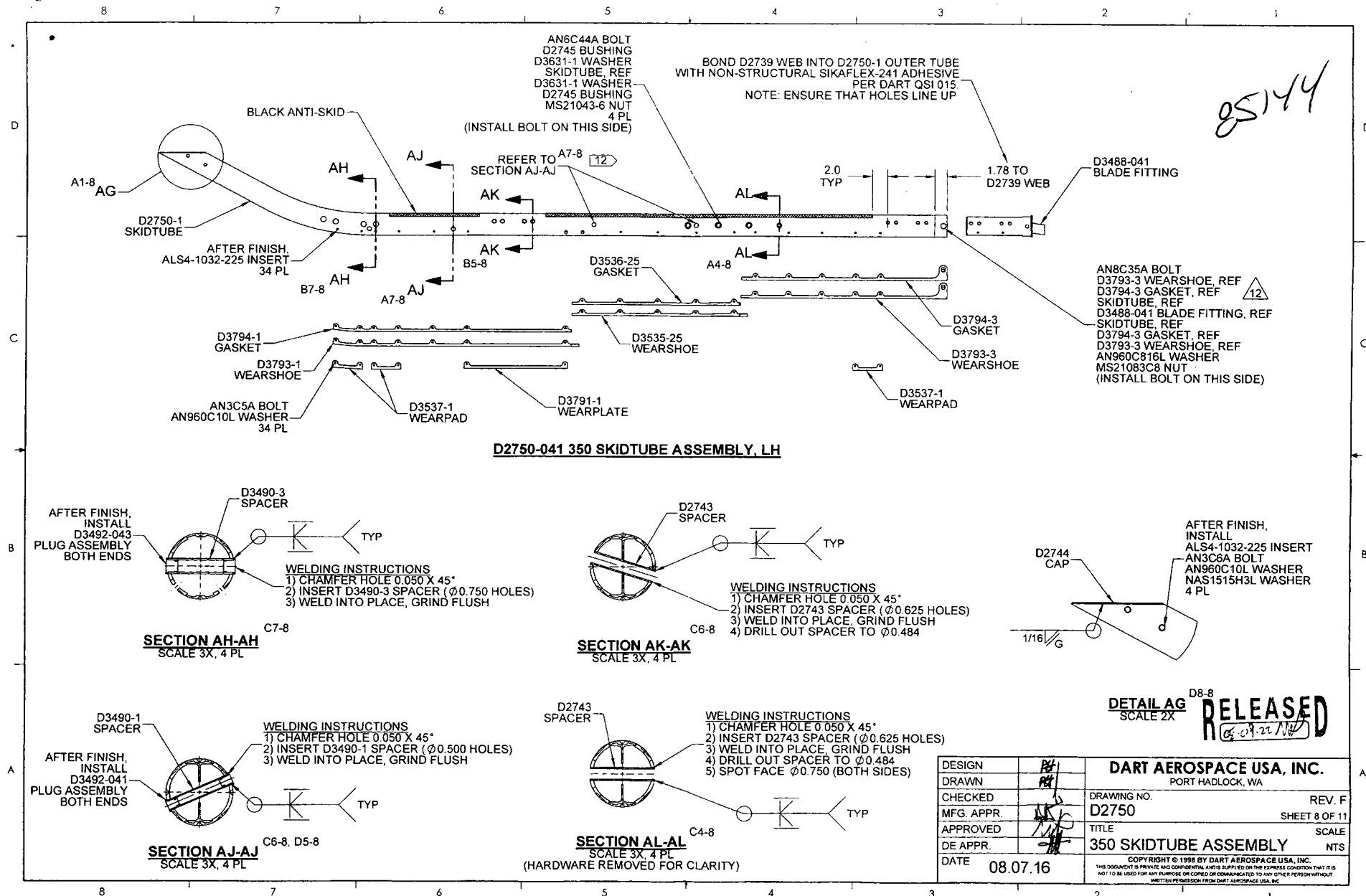
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

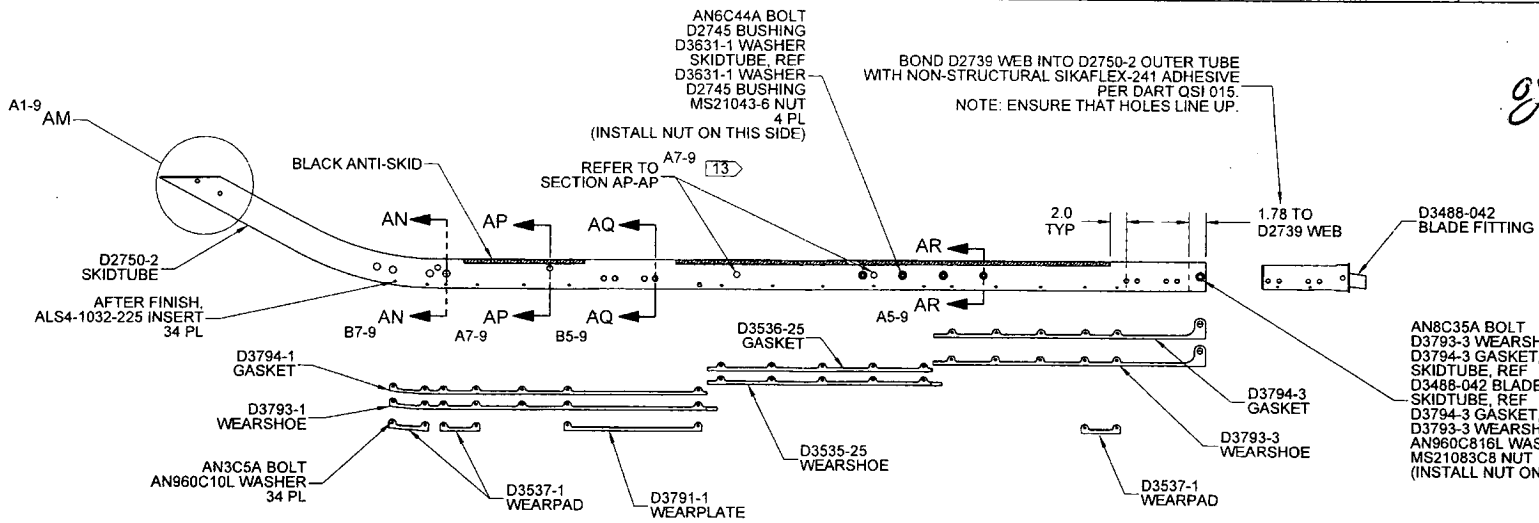
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

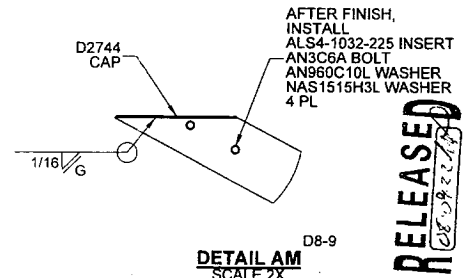
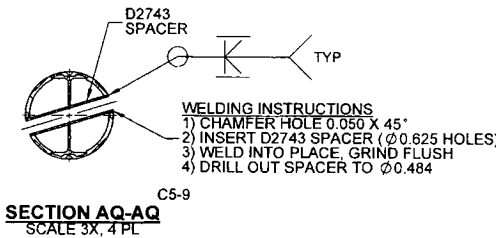
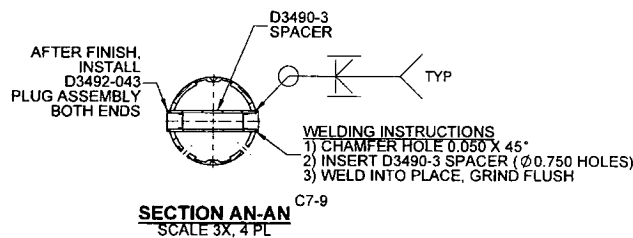
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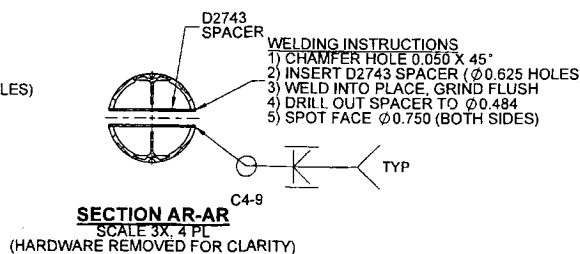
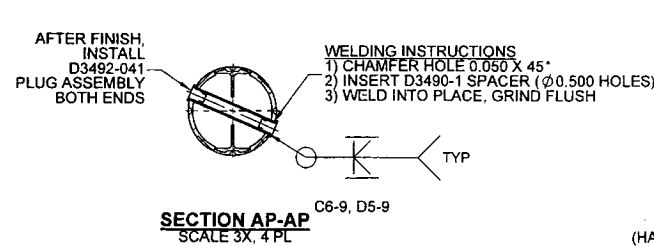
05144



D2750-042 350 SKIDTUBE ASSEMBLY, RH



RELEASED
08-09-2008



DESIGN	PH	DART AEROSPACE USA, INC.	
DRAWN	PH	PORT HADLOCK, WA	
CHECKED	AK	DRAWING NO.	REV. F
MFG. APPR.	AD	D2750	SHEET 9 OF 11
APPROVED	AD	TITLE	SCALE
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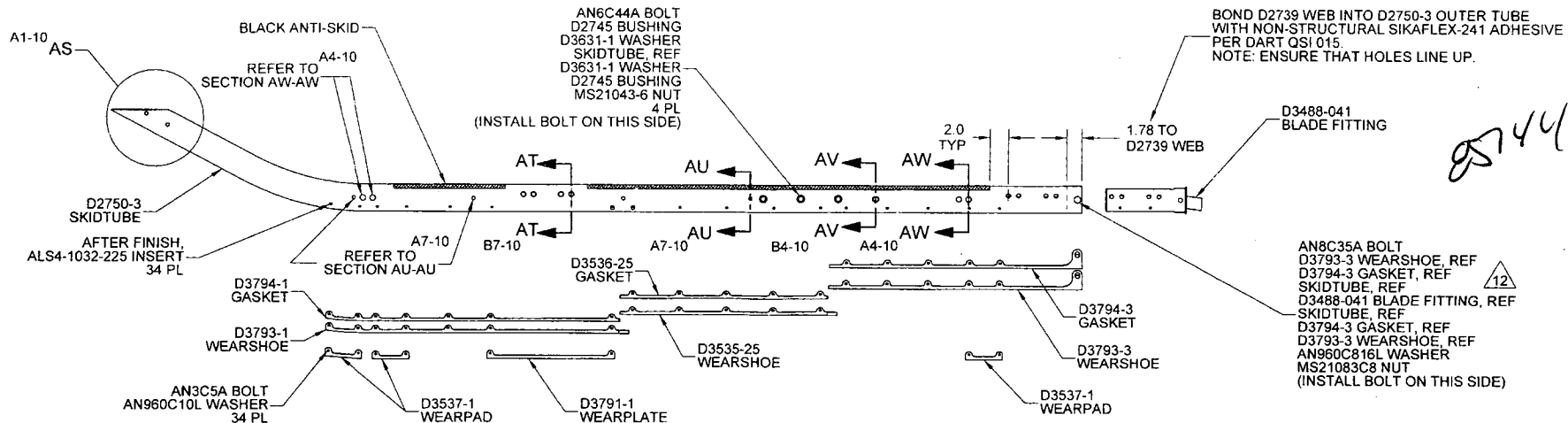
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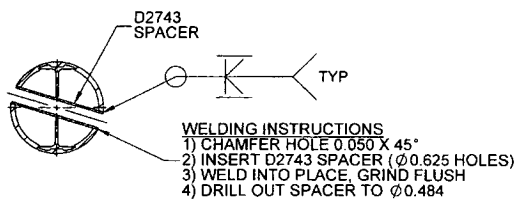
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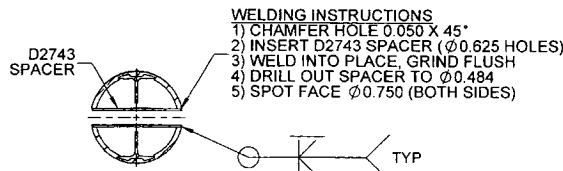
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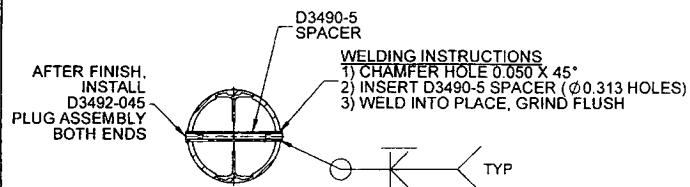
D2750-043 350 SKIDTUBE ASSEMBLY, LH



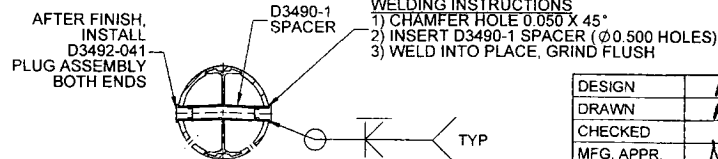
SECTION AT-AT
SCALE 3X, 4 PL



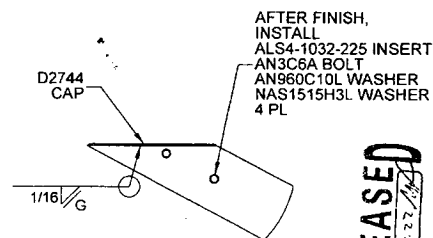
SECTION AV-AV
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)



SECTION AU-AU
SCALE 3X, 4 PL



SECTION AW-AW
SCALE 3X, 4 PL



DETAIL AS
SCALE 2X

DESIGN	REV. F	DART AEROSPACE USA, INC.	
DRAWN	REV. F	PORT HADLOCK, WA	
CHECKED	REV. F	DRAWING NO.	REV. F
MFG. APPR.	REV. F	D2750	SHEET 10 OF 11
APPROVED	REV. F	TITLE	SCALE
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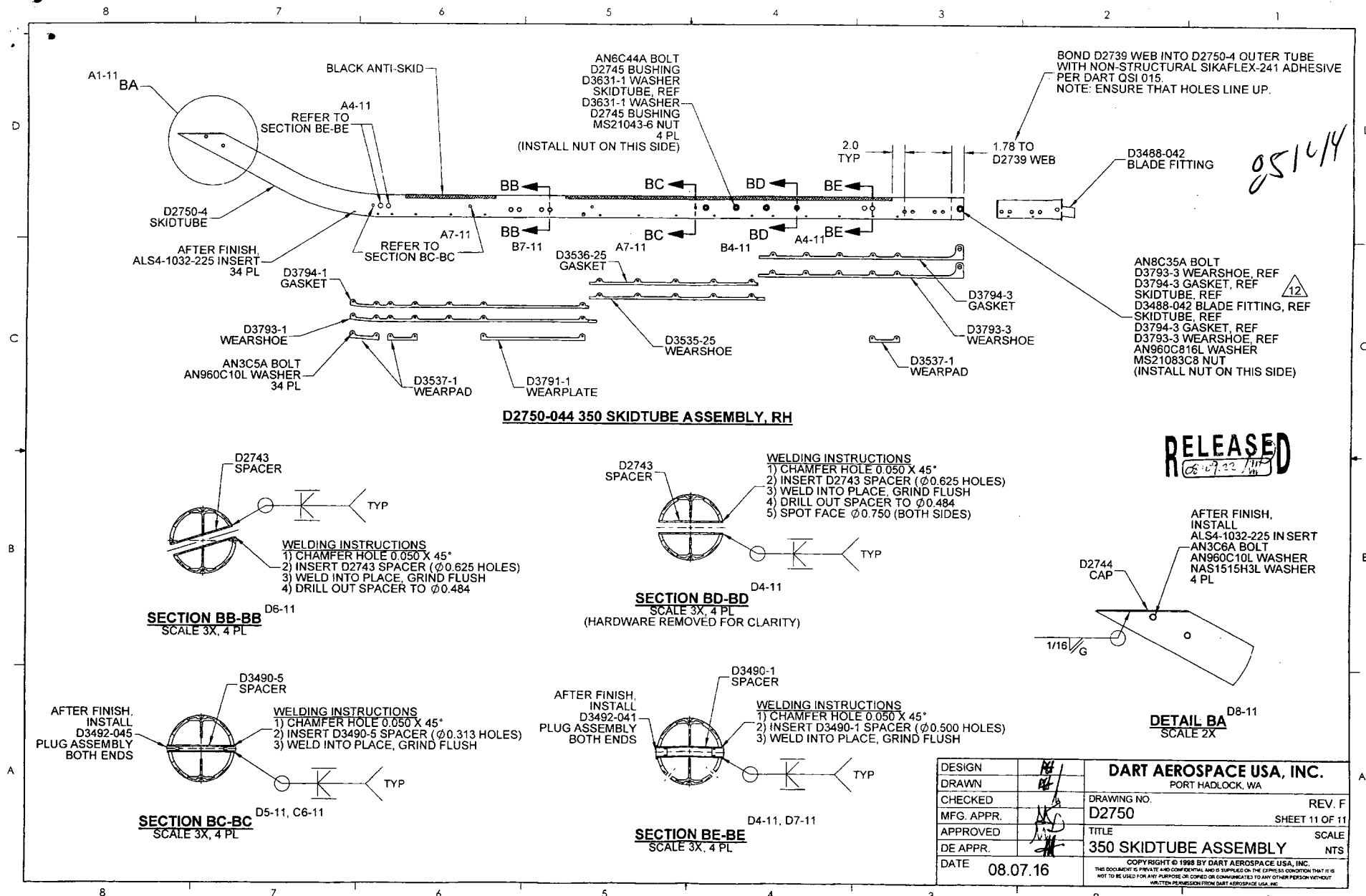
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NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 294

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barday Elliott
Job number: 83800
Part number: A350-636-012
Description: Skid tube
Welding Process: Tig[☒] Mig[☐]
Base material: Alum
Current: AC[☒] DC[☐]

TEST REQUIREMENTS AND RESULTS

Visual:

pass[☒] fail[☐]

Penetration:

pass[☒] fail[☐]

UNACCEPTABLE

Cracks:

pass[☒] fail[☐]

Undercut:

pass[☒] fail[☐]

Pin holes:

pass[☒] fail[☐]

Overlap (cold lap)

pass[☒] fail[☐]

Porosity (surface):

pass[☒] fail[☐]

Coloration:

pass[☒] fail[☐]

Qualifier David A. A. A.

Date of Test Coupon 12.05.09

Welder Barday Elliott

Date of Test Coupon 12.05.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld